

WHAT IS CLAIMED IS:

1. A solid state imaging device comprising:

an imaging region including unit cells arranged
in a matrix of rows and columns to provide a plurality
of pixel rows, each of said unit cells having
photoelectric conversion means for photoelectrically
converting incident light, applied to pixels, to store
signal charges, readout means for reading out stored
signal charges to a detection node, and amplifying
means for amplifying the readout signal; and

a readout voltage switching circuit for setting a
readout driving signal, applied to said readout means,
to one of a plurality of voltages different to one
another according to internal control.

2. The solid state imaging device according to
claim 1, wherein said readout voltage switching circuit
sets a voltage of said readout driving signal,
corresponding to a readout pulse for dynamic range
increase, to a lower voltage than a voltage of said
readout driving signal corresponding to a usual readout
pulse.

3. The solid state imaging device according to
claim 1, wherein said readout voltage switching circuit
sets a voltage of said readout driving signal,
corresponding to said readout pulse for said dynamic
range increase, to a lower voltage than a voltage of
said readout driving signal corresponding to a pulse

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for an electronic shutter and said voltage of said readout driving signal corresponding to said usual readout pulse.

4. A solid state imaging device comprising:

5 an imaging region including unit cells arranged
in a matrix of rows and columns to provide a plurality
of pixel rows, each of said unit cells having
photoelectric conversion means for photoelectrically
converting incident light, applied to pixels to store
10 signal charges, readout means for reading out stored
signal charges at a detection node, and amplifying
means for amplifying the readout signal;

 a plurality of readout lines provided in a
horizontal direction in corresponding to each pixel row
15 in said imaging region, said plurality of readout lines
transmitting a readout driving signal for driving each
readout means of said unit cells in a corresponding
pixel row respectively;

 a pulse production circuit for producing a
20 plurality of pulses for respective pixel rows as pulse
signals for controlling readout timing in said
plurality of pixel rows;

 a readout voltage switching circuit for setting a
voltage of said readout driving signal, applied to said
25 readout means in correspondence to a part of pulse in
said plurality of pulses, to a voltage differ from said
voltage of said readout driving signals, applied to

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said readout means in correspondence to the other pulse in said plurality of pulses; and

5 a plurality of vertical signal lines, provided in correspondence to respective pixel columns in said imaging region, for transmitting a signal provided from said unit cells of said each pixel row in a vertical direction.

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10 5. The solid state imaging device according to claim 4, wherein said pulse production circuit generates in sequence a readout pulse for a dynamic range increase and a usual readout pulse as said plurality of pulses, and wherein said readout voltage switching circuit sets a voltage of said readout driving signal, corresponding to a readout pulse for
15 said dynamic range increase, to a lower voltage than a voltage of said readout driving signal corresponding to said usual readout pulse.

20 6. The solid state imaging device according to claim 4, wherein said pulse production circuit generates in sequence a readout pulse for said electronic shutter, a readout pulse for said dynamic range increase and a usual readout pulse as said plurality of pulses, and wherein said readout voltage switching circuit sets a voltage of said readout
25 driving signal, corresponding to a readout pulse for said dynamic range increase, to a lower voltage than a voltage of said readout driving signal corresponding to

10. The solid state imaging device according to claim 7, wherein said imaging region further includes reset means for resetting a detection node for reading signal charges stored at said photoelectric conversion means, and

wherein said vertical driving means supplies a reset signal for driving said reset means prior to said read driving signal.

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